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**Operational Main Effort
and Campaign Planning**

**A Monograph
by
Major Peter J. Palmer
Infantry**

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United States Army Command and General Staff College
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This study examines the main effort concept to determine if it is a necessary element for the design of a campaign plan. Current joint operational doctrine fails to address the main effort concept. This study examines service tactical doctrine, service operational doctrine, theory, and contemporary writers to articulate an operational main effort concept. The main effort concept and ends, ways and means variables are then used to analyze four campaigns: Germany's successful 1940 campaign to conquer France; Germany's unsuccessful 1942 campaign on the Russian Southern Front; Japan's unsuccessful 1942 naval campaign against Midway and Germany's unsuccessful 1940 air campaign against Great Britain. The element of proof in judging the need for the main effort concept in campaign planning was based on the concept's role in the success or failure in the above campaigns. This study concludes that a need for a main effort concept is supported by military theorists and current U.S. Army and Marine Corps operational doctrine. The main effort concept proved instrumental to the German's successful invasion of France in 1940. Improper application of the main effort concept by campaign planners contributed to the unsuccessful results of the remaining three campaigns. The main effort concept proved applicable to air and sea campaigns as well as land campaigns.

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INTRODUCTION

*Coordinate your combat power. Bring the mass...
together at the point of main effort.*

LTC A. Tack Always¹

Field Manual 100-5, Operations, lists the designation, sustainment and shifting of the main effort as an "AirLand Battle Imperative."² Although FM 100-5 addresses Army operational concepts, these concepts are not doctrinally binding for other services. Air Force Manual (AFM) 1-1, Basic Aerospace Doctrine, does not discuss the concept of main effort at the operational or tactical level. However, the manual does allude to the concept of main effort in its discussion of "mass and economy of force" (author's broad interpretation).³ In FMFM 1-1, Campaigning, the Marine Corps addresses an operational concept similar to main effort, but they term it "focus of effort."⁴ FMFM 1-1 manual does not discuss how or what to designate as the focus of effort, but only that the focus of effort should be against an "object of strategic...operational importance."⁵

The doctrinal manual that should standardize the services' use of doctrinal concepts, Joint Chiefs of Staff (JCS) Publication 3-0 (Test Pub), Doctrine For Unified and Joint Operations, fails to address the concept of main effort. The manual does stipulate "the theater in which operations are most critical is assigned priority of resources and is referred to as the 'theater of focus'."⁶ However, this concept involves prioritizing from a strategic, not an operational, perspective.⁷ In its discussions of campaigns,

subordinate campaigns, major operations and operations, the manual does not address or allude to the concept of a main effort.

JCS Pub 1, Department of Defense Dictionary of Military and Associated Terms and FM 101-5-1 Operational Terms and Graphics reveal there is no official definition for the term main effort at either the tactical or operational level of war.

This doctrinal review indicates that the concept of main effort is not precisely defined as a doctrinal tenet in its current form. The purpose of this paper is to determine if the main effort concept is a necessary design component of the campaign plan.

This analysis consists of two sections. The first section will examine military theoretical writings, current writings, and tactical doctrine to develop and describe the main effort concept. This analysis will also look at how a main effort force is designed and what benefits are derived from using the main effort concept.

The second section will analyze both successful and unsuccessful campaigns. It will use ends, ways and means (EWM) as analysis criteria to determine if the main effort concept played a significant role in the success or failure of that particular campaign. The main effort concept's role in the outcome (e.g., success or failure of a given campaign) will form the element of proof to determine the concept's necessity to the design of that campaign plan.

The first campaign to be analyzed is Germany's successful campaign to conquer France in 1940. The second campaign will be Germany's unsuccessful 1942 campaign on the Southern Front to

capture the Soviet Caucasus Mountains. To determine whether the main effort concept also applies for air and naval operations, this study will analyze the Japanese naval campaign that resulted in the battle of Midway and the 1940 air campaign conducted by the Germans against Great Britain. This last campaign is more commonly known as the "Battle of Britain."

This study has several limitations. There are no universal definitions or, in some cases, no definitions for many terms at the operational level. Therefore, definitions for operational terms used in this paper will be listed in Appendix A, "Operational Terms." Additionally, inconsistencies may arise in retroactively analyzing these historical campaigns using modern conceptual designs and terms.

Section I: MAIN EFFORT CONCEPT

The main effort concept is not clearly defined or discussed in operational doctrine. This section develops a clearer understanding of the main effort concept by answering the following three questions:

- * What is a main effort?
- * What benefits does the main effort concept provide to the campaign planner?
- * How does the campaign planner design a main effort?

The answers to these questions are not contained in any single document or source. Therefore answers to these questions are derived from four sources: theory, service operational doctrine, tactical doctrine and current writings. For this study these sources were analyzed using the ends, ways and means (EWM) equation and analysis criteria.⁴

What is a Main Effort?

The absence of discussion of the main effort concept in Joint, Naval and Air Force doctrine necessitates a further review of Army and Marine doctrine. Army doctrine, FM 100-5, Operations, lists the designation, sustainment and shifting of the main effort as a battlefield imperative.⁵ It further states: "The commander identifies the main effort when he states his concept of the operation."¹⁰ Army tactical doctrine (e.g., the 71 series Field Manuals) also emphasizes the importance of designating, shifting and sustaining a

main effort.¹¹ Tactical doctrine also provides tactics, techniques and procedures (TTP) for this concept.¹²

Marine campaign doctrine (FMFM 1-1, Campaigning) is not as definitive as Army operational and tactical doctrine. Marine doctrine emphasizes: "[campaign] design should focus all the various efforts of the campaign resolutely on the established theater strategic aim."¹³ This more general use of focusing efforts by Marine doctrine is in line with Clausewitz's views on planning a war "designed to defeat the enemy." He states:

But while the main operation must enjoy priority over minor actions, the same priority must also be applied to all its parts. Which forces from each theater shall advance toward the common center of gravity is usually decided on extraneous ground; all we are saying, therefore, is that there must be an effort to make sure the main operation has precedence.¹⁴

Clausewitz further emphasizes the need to prioritize efforts on the enemy's center of gravity and decisive point in his chapters entitled: "Superiority of Numbers, Concentration of Forces in Space and Unification of Forces in Time."¹⁵ Jomini also supports the concept of focusing efforts (massing forces) on the decisive point as a "fundamental principle of war."¹⁶

Finally, German doctrine emphasizes the main effort concept by its use of the term Schwerpunkt.¹⁷ This term is defined by some authors as the main effort,¹⁸ point of effort,¹⁹ or thrust-point.²⁰ Regardless of which translation is used, the intent remains the same. The Germans clearly emphasize the necessity of focusing efforts at the decisive point to achieve the operational ends. Designation of a main effort force can support this purpose.

The previously discussed review of doctrinal and theoretical writings suggest that the main effort concept applies only to offensive operations.²¹ However, the main effort concept also applies to defensive operations. The major difference involves the focus of the main effort force. In defensive operations the campaign planner may initially be more concerned with protecting his own center of gravity than with attacking the enemy's center of gravity.²² Therefore, the initial designation of a main effort will be to forces that can best protect his own center of gravity. This does not mean that the entire campaign should focus on negative aim of just protecting the defender's own center of gravity. At some phase in the campaign (e.g., enemy's culmination point), the planner must look at attacking the enemy's center of gravity. Consequently, the main effort concept is also applicable to defensive operations.

Based on the above review of U.S. Army doctrine, Marine Corps doctrine and historical theorists, the main effort concept belongs to the ways and means portion of the EWM equation for campaign planning. In other words, after the commander has determined his ends (objectives), he must then develop a way to focus his efforts to obtain that end. Then he must designate specific forces (means) that are best suited to accomplish or support the accomplishment of this end.

Simply describing main effort as a way and means does not completely define or clarify the main effort concept. Therefore, it is important to identify the value a main effort concept provides to the campaign planner.

What Benefits Does the Main Effort Concept Provide to the Campaign Planner?

A review of doctrine, current writings and theoretical writings determined that the main effort concept does provide several benefits to the campaign planner in the design and conduct of his campaign. The first benefit is that the main effort concept provides a reference point by which campaign planners focus their campaign design.

The campaign plan design should be directed against the enemy's center of gravity or decisive points. As FM 100-5, Operations states: "Its attack is--or should be--the focus of all operations."²³ The designation of a main effort force is the campaign planner's primary method of ensuring that the focus of effort is against the enemy's center of gravity or a decisive point. Clausewitz also emphasizes the necessity of designating a main effort force against the enemy's center of gravity when he discusses the need for "precedence" in operations against a "common center of gravity."²⁴

General (GEN) John Foss, TRADOC Commander, in his article "Command," describes three additional benefits that can be obtained by the designation of a main effort force. These benefits include: "freedom of action, responsibility and a common basis for action."²⁵

The commander who has been assigned the main effort knows he has greater freedom of action and less responsibilities to the rest of the force. Commanders who have been assigned missions other than the main effort know they have responsibilities to support the main effort (for example, protect the

flank, provide supporting fires, and the like) and not divert resources from the main effort. In the chaos of combat, an understanding of the main effort provides a common basis for action.²⁶

These three benefits also contribute to the principles of unity of effort and concentration. It becomes more than just concentration of forces but also one of concentration of focus. Concentration of focus implies not only massing of resources, but also that this massing results in specified desired effects.

A final benefit from designating a main effort force involves the aspect of resource allocation.²⁷ In an ideal situation, campaign planners would have all the resources necessary to execute numerous courses of action. In most cases there are resource limitations placed on the campaign planner. Therefore, the campaign planner must balance possible courses of action with available resources. The main effort concept assists in this process. In On War, Clausewitz addresses the necessity of allocating resources to the main operation:

We hold, moreover, that the plan of operations should have this tendency even when the enemy's whole resistance cannot be reduced to a single center of gravity and when, as we have once put it, two almost wholly separate wars have to be fought simultaneously. Even then one of them must be treated as the main operation, calling for the bulk of resources and of activities.²⁸ (emphasis added)

By prioritizing the main effort force, the campaign planner prioritizes resources to the force that by design is attacking the enemy's center of gravity (i.e., The most important force gets the resources it needs to succeed).

In summary, the designation of a main effort force provides several benefits to the operational planner and commander. First, by concentrating against the enemy's center of gravity, the main effort maintains the proper focus for the entire campaign. Second, by designating a main effort force, the campaign planner establishes freedom of action, responsibility and a common basis of action for the participating commanders. Third, the main effort concept also addresses the principles of unity of effort, and concentration. Finally, assigning a main effort force also facilitates the prioritizing of limited resources.

How Does the Campaign Planner Design a Main Effort?

First: Identify Center of Gravity or Decisive Points and Retain Capability to Shift the Main Effort Force.

The primary consideration in designing a main effort force is that it needs to be focused against the enemy's center of gravity or a decisive point that can affect the enemy's center of gravity. Achieving this requirement is more complicated than it may appear. The first problem is the accurate identification of the correct center of gravity or decisive point(s). Improper identification of the enemy's center of gravity impacts on the designation of the main effort. A campaign planner must compensate for the possibility of incorrectly identifying the center of gravity. He can do this by designing the campaign plan to allow for *shifts* of the main effort to the newly identified center of gravity or decisive point(s). Thus, flexibility in shifting the main effort must be a part of the

campaign design.

This shifting of a main effort may also be by specific design. By definition, a campaign is conducted in phases. Each phase may have a different decisive point or center of gravity that must be attacked. Like planning for an operational pause, campaign planners may plan the shifting of the main effort force based on a new decision point or event.

This shifting concept contributes to a second main effort design consideration that involves the selection of the appropriate main effort force(s). For example, a campaign planner may identify "command and control nodes" as a decisive point for the first phase of a campaign. He then could choose the air component force as his main effort force during this phase because the air component is the best force suited to achieve the desired affects against this particular decisive point. Once the air component forces have achieved the desired results against this decisive point, the campaign planner could then shift the main effort to ground component forces. These forces could now attack a decisive point critical to this phase of the campaign.

Second: Weight the Main Effort Force.

Once the main effort force is chosen, weighting of the main effort becomes the next design consideration for the campaign planner. How to weight a main effort is not well documented in tactical doctrine. However, some possible methods that can be used by both tactical and operational planners include: allocation of

combat, combat support (CS) and combat service support (CSS), allocation and prioritization in supplies and sustainment resources, focus of collateral operations, assignment of geography, and acceptance of risk.²⁹

Allocation of combat, CS, CSS, supplies and sustainment resources can be based on normal staff estimate processes (e.g., wargaming, IPB, engineer estimate, etc.). Most tactical manuals discuss this aspect of weighting the main effort. For example FM 71-100, Division Operations states:

The division weights the main effort with additional tactical units, engineers, air defense, CSS, and reinforcing artillery fires. It ensures that every available weapon system is directed towards supporting the main effort.³⁰

The term "collateral operations" is not a doctrinal term, but the idea that it conveys may be useful to the campaign planner and the main effort concept.³¹ Collateral operations are those operations that are conducted in conjunction with major operations and are designed to support the completion of the major operation (e.g., deception operations, psychological operations).³² Therefore, collateral operations can be developed to support the main effort force operations. For example, deception operations convinced Hitler that the Allied invasion would be at the Port of Calais instead of Normandy. This collateral operation assisted the Allies' main effort forces with their invasion of Normandy by fixing German forces at the Port of Calais.

Assignment of geography is also another technique for weighting the main effort force. For example, a campaign planner

can allocate the main effort force a smaller attack frontage to increase force concentration. The campaign planner may also assign the main effort a zone of attack that includes the best lines of communications (e.g., railroads, roads).³³

The final aspect of weighting is the acceptance of risk. Although risk permeates all aspects of campaign planning, its incorporation into the planning process is best considered in the weighting of the main effort. Since the main effort is targeted against the enemy's center of gravity, minimum risk should be accepted when designing the main effort. However, a campaign planner can provide the main effort force with the necessary resources by accepting risk in allocating less resources to forces not designated as the main effort. Clausewitz supports this aspect when he discusses his concept of relative superiority:

...skillful concentration of superior strength at the decisive point, is more frequently based on the correct appraisal of this decisive point, on suitable planning from the start; which leads to appropriate disposition of the forces, and on the resolution needed to sacrifice nonessential for the sake of essentials... (emphasis added)³⁴

Risk acceptance is also discussed in current tactical doctrine.

For example FM 100-15, Corps Operations, states:

Attacking a comparable-sized...army will usually require the Corps to accept risks in a part or parts of its zone of action to achieve concentration at the decisive point.³⁵

Risk assessment is therefore a necessary aspect of campaign planning. The planner must, however, limit the risk to the main effort force by diverting resources from non-main effort forces.

Third: Designate the Main Effort Force.

The final consideration for the designating the main effort concerns the actual purpose and intent of assigning the main effort. Should the main effort be assigned to an operation or to a particular force or command? There is no clear rule at the operational level on whether the force or the operation should be labeled as the main effort. The difference may be one of perspective.

The force is the means, the operational design is the way. During the design of the campaign, the campaign planner uses the main effort concept to design the operations (ways) to be used to achieve the desired endstate. For example, a planner could state: "during Phase I, air operations (ways), will conduct the main effort." However, when it comes time to assign force (means) to conduct this operation, the campaign planner can specifically designate a particular force. Thus, the means flow from the ways.

Designating a force as the main effort is important; that is how a campaign planner obtains the benefits of responsibility, freedom of action, and common basis for action. If an operation is designated as a main effort, who in the operation has the freedom of action or the responsibility to support whom? Only the designation of a force can create these relationships. To limit misunderstanding between designating a force or operation, doctrine could use the term "focus of effort" when referring to operations and "main effort" when referring to forces.

In summary, designing the main effort is more of an art than a science. A campaign planner must identify the appropriate center of gravity. Then the planner must design his main effort to achieve the desired affect on the center of gravity (ways). This design should be flexible enough so the main effort can be shifted if necessary. The planner then must choose the correct force (means). This force must then be appropriately weighted in accordance with acceptable risks. Finally, the planner should design an operation using the main effort concept and designate a force as the main effort to ensure all the benefits of the main effort concept can be realized by the operational commander.

Summary of the Main Effort Concept

The main effort concept includes the ways and means variables of the EWM equation. This concept provides the operational planner with the benefits of a method to maintain an operational focus and a prioritization method to properly allocate resources. It also benefits subordinate commanders by establishing their degree of freedom of action, their responsibilities in the overall campaign and by providing a common basis of action from which they can act. Finally, proper weighting of the main effort is necessary to assure success and limit risk.

The next section will review and analyze four selected campaigns. The main effort concept, as discussed in this section, will be used as criteria in that analysis process.

Section II: CAMPAIGN ANALYSIS

1940 GERMAN CAMPAIGN IN THE WEST

*To secure ourselves from defeat lies in our hands,
but the opportunity of defeating the enemy is provided
by the enemy himself.*

Sun Tzu³⁶

Strategic Setting

After his successful conquest of Poland in 1939. Hitler turned his military attention on his new war opponents, France and Great Britain. Germany's war plans evolved into four theaters of operation and four complementary campaigns.³⁷ The first campaign was the conquest of Denmark and Norway (Operation Weser) in April 1940, to "secure the supply route of Swedish ore and to broaden the base for the mercantile war against Britain."³⁸ The second and simultaneous campaign was the German Navy's "Battle of the Atlantic." This mercantile focused campaign was designed to employ German U-boats to isolate the British Isles from their sources of supply.³⁹ Operation Weser and a third campaign Fall Gelb (Operation Yellow) against Holland, Belgium and France had as a part of their strategic ends the capture of west coast naval bases. These ends were designed to support the execution of the naval campaign. The third campaign's strategic ends as outlined in Directive No. 6 were:

To defeat the largest possible elements of the French and Allied Armies and simultaneously to gain as much territory as possible in Holland, Belgium and Northern France as a basis for successful air and sea operations against Britain and as a broad protective zone for the Ruhr.⁴⁰

The fourth campaign was designed to defeat Britain through the use of air and sea operations and, if necessary, a ground invasion. This study will center its analysis of main effort using the third campaign.

Campaign Plan

The original 19 October 1939 version of Fall Gelb (Operation Yellow) was designed with the strategic end state discussed above. The operational EWMs of the campaign plan were as follows:

The main objective of the initial attack was to secure central Belgium by means of a large pincer operation around Liege, with the main weight in the north. Then, the three armies (37 divisions), comprising Army Group B were to concentrate north and south of Brussels so as to continue the offensive westwards without delay. In the second phase of the attack a thrust would be directed at Ghent and Bruges. The task of Army Group A (27 divisions) to the south would be to guard Army Group B's left flank. Meanwhile Holland would be occupied in a separate operation by Army Detachment N (North), a small force of three divisions. No attack would be made on the Maginot Line.⁴¹

This plan went through four more changes including addition and elimination of forces and changes in the main effort location. The following facts contributed to the development and decision on the final plan. First, intelligence and wargames indicated a weakness in the French defense in the Ardennes area. Second, the original plan's 16th January attack date was postponed. Finally, the assumed capture of a German courier compromised the original plan. Therefore, Hitler decided the final plan would have the main effort in the center sector Army Group A.⁴²

The final campaign EWMs were:

The Channel coast south of the Somme estuary...to carry out this plan, the relative strengths of Army Groups A and B were reversed, von Bock was left with two armies and twenty-nine divisions, while von Rundstedt was given four armies and forty-five divisions, including three quarters of the mechanized units.⁴³

Army Group C, consisting of nineteen divisions, was created to conduct a secondary fixing attack against French forces deployed on the Maginot line.⁴⁴

The plan was designed to take advantage of the expected reinforcement of Belgium by French forces. Army Group B would be supporting the main effort force, Army Group A, by tying down French forces while Army Group A cut the French Army in two.

Conduct of the Campaign (Significant Events)

The plan worked to perfection. The only operational shortcoming was the failure to destroy the British at Dunkirk. The original plan did not envision the full conquest of France. The final phase of the campaign, Fall Rot (Operation Red), was developed after the initial success in phase one, Operation Yellow. Faced with overwhelming German forces, the remaining French forces quickly fell to a broad front attack by German Army Groups.⁴⁵

Campaign Analysis

The success of this campaign can be directly attributed to the focus, design and weighting of the main effort forces. As discussed in the first section, the main effort force should be directed

against the enemy's center of gravity or a decisive point(s). The final main effort focus was against such a point.

Allied dispositions counted on the main thrust coming through the Belgian plain, as the original German plan had envisaged; there was no thought that the Germans might launch their Schwerpunkt through the Ardennes to the south. Although this was the most important point in their defenses, being the hinge between the Maginot Line and the Allied Northern forces, it was at the same time their weakest...therefore they placed only nine divisions in what was, unbeknown to them, the mass of the invasion force...⁴⁶

The significance of this decisive point is further emphasized by the fact that across the entire front the Allies outnumbered the Germans in tanks (3,600-Allies to 2,574-Germans), artillery (11,500-Allies to 7,700-Germans) and personnel (3,740,000-Allies to 2,760,000-Germans).⁴⁷ The only material advantage for the Germans was in aircraft.⁴⁸

In designing the main effort, the German campaign planners effectively weighted Army Group A with the forces, geography, and the support necessary to achieve its objectives. The reallocation of divisions from Army Group B (previous main effort) to Army Group A illustrates the weighting of the main effort with combat and CS forces. It also illustrates the concept of shifting the main effort once a new decisive point had been determined. By directing the main attack through the Ardennes (geography), the Germans balanced the risk of having poor lines of communication and support against the possibility of achieving operational surprise.

Designating the main effort force also established the relationships of freedom of action, responsibilities and common basis for action. While Army Group A was given the freedom of

action to exploit success, Army Groups B and C were limited to conducting broad front attacks to fix and deceive Allied forces in Belgium and behind the Maginot Line. As Matthew Cooper stated in his book The German Army:

As the German advance into Belgium drew the Allies attention, together with the bulk of their armoured forces, to the North the decisive stroke was being mounted in the South.⁴⁹

It is also important to note that a unit (Army Group A) instead of an operation was designated as the main effort.

Several authors who have written about this campaign use the terms "main effort" and "Schwerpunkt" to describe an operational force. These same authors, including Field Marshal von Manstein who assisted in the development of the campaign plan, were adamant in their support for the use of a properly designed main effort force.⁵⁰

In summary, the German campaign planners' designation, focus, design, shifting and weighting of the operational main effort proved significant to the overall success of the campaign. This success came against a numerically superior force. This paper will now examine an unsuccessful campaign to determine if the failure can be attributed to the misuse of the main effort concept.

1942 GERMAN CAMPAIGN ON THE EASTERN FRONT (OPERATION BLUE)

The best criterion of the value of a divided disposition is that the separate distribution is a conditional state...while fighting with all forces is the true purpose.

Carl von Clausewitz⁵¹

Strategic Setting

After failing to defeat the Soviets during Operation Barbarossa and withstanding the Soviet Winter Offensive, Hitler, in disagreement with his senior military commanders, pushed for a second offensive in the summer of 1942. Hitler dismissed von Brauchitsch, the Supreme Commander of the Army and assumed the position himself. This act essentially rendered Hitler as both the strategic and the operational commander.⁵² He identified his strategic endstates as "two objectives...to destroy the Soviet Union's defensive strength 'conclusively' and to deprive it of the resources necessary for its war economy 'as far as possible' (Directive No. 41.)."⁵³ Hitler also established the means and ways as follows: Northern Armies were to capture Leningrad and link-up with the Finns, Center Armies were to continue to defend. Southern Armies were then to breakthrough to the south (Caucasus). The Southern Armies were the main effort for this theater of operations.⁵⁴

Campaign Plan

As the operational commander, Hitler's operational ends for the first phase focused on the "River Volga at Stalingrad."⁵⁵ The

Caucasus would be the operational end for the subsequent campaign phase (Blau IV).⁵⁶

The planned ways and means included a three pronged operational maneuver plan. Blue I, with the 2nd German, the 2nd Hungarian, and the 4th Panzer (PZ) armies would attack east from Kuzsk to the East bank of the Don. The 4th PZ would then move south along the river and conduct a link-up with the 1st PZ Army at Stalingrad. Blue II, with the 6th German Army, would attack from Kharkov east almost to the Don, then turn southeast on the right flank of Blue I. Blue III, with Group A, would attack from Taganrog to the lower Don and then to Stalingrad.⁵⁷ The 1st PZ Army would be this phase's operational main effort.⁵⁸

Conduct of the Campaign (Significant Events)

The actual conduct of the operational plan began to deviate because of weather, terrain and Hitler's intervention.⁵⁹ Although the Germans were experiencing success when they maintained their focus on Stalingrad, Hitler's tinkering was slowly changing the focus to encircling and destroying enemy forces on a more limited basis.

"The diversion of 4th Panzer Army from Stalingrad to the lower Don was a fatal mistake;...It could have taken Stalingrad without a fight, at the end of July, but was diverted south to help me [Halder] cross the Don."⁶⁰

Hitler still sensed success and further diluted the main effort forces with Directive No. 45. With this directive, Hitler created two major operations, one to continue the attack to Stalingrad and the second to continue the attack to the Caucasus.⁶¹

Consequently, "the resources [sustainment] of the two army groups were simply not sufficient for simultaneous tasks."⁶² "Hitler once again wanted to do everything all at once with only limited resources."⁶³

Campaign Analysis

Although not necessarily by design, Hitler's operational main effort focused against a decisive point, Stalingrad. Stalingrad was also the Soviet's left flank.

The incorrect determination by the Soviet Supreme High Command of the direction of the enemy's attack...led to decisions that were in strategic error. Instead of concentrating forces in the operations zone of the Southwest and South Fronts...the Stavka continued to fortify the central sector of the front...⁶⁴

Consequently, the Germans' main effort was focused on the least defended portion of the Front and had the potential of flanking the Soviet main forces.

The design and weighting of the main effort for this campaign was micro-managed due to a severe shortage of available resources. By designating the Southern theater the main effort, Hitler was able to provide resources to the Southern theater from the Center and Northern theaters. For example, personnel in the main effort sector were brought up to 100% at the expense of the Central and Northern sectors. These sectors were left at 35% and 50% respectively.⁶⁵

The sustainment and resource situations for this operation was severely hindered by a "shortage of load-carrying vehicles and horses...fuel oil...[and] ammunition...and combat vehicles."⁶⁶ Again by prioritizing the Southern sector, the German command felt a

"complete replenishment" could be achieved in the Southern sector.⁵⁷ Consequently, Hitler accepted risk in the North and Center sectors to achieve the necessary force to weight the main effort in the South. However, unlike earlier campaigns there were no major resource reserves to compensate for mismanagement or misuse of those resources dedicated to the main effort forces.

Hitler's campaign plan included a collateral operation entitled Operation Kreml. This deception was intended to portray the main effort against Moscow instead of Stalingrad.⁶⁸ Whether Operation Kreml was effective or if it was a Soviet intelligence failure, the results were the same:

Stavka recognized the possibility of a German offensive in the south but made 'a strategic error' and assumed that the most probable German attack would not be toward Stalingrad and the Caucasus but toward Moscow and the central industrial region...the Stavka and the General Staff [concluded] that his main attack would be in the center [toward Moscow].⁶⁹

Based on the initial operational successes and the army group commander's belief that Stalingrad was attainable, the main effort force could have achieved its objectives. Unfortunately, this cannot be determined. Instead, the main effort concept was misused by Hitler and consequently directly contributed to the overall failure of the campaign.

The first and most significant misuse of the main effort concept was Hitler's change of operational endstates. His original operational objective was Stalingrad and the destruction of the Soviet forces. He changed his endstate with Directive 45 to include both Stalingrad and the Caucasus. With this directive

"Hitler committed the cardinal tactical [operational] sin of splitting his forces and sending them off in two directions at right angles to each other."⁷⁰ In essence, he created two main efforts. The two efforts were not mutually supportive and they required double sustainment operations. "The resources of the two army groups were simply not sufficient for such simultaneous tasks."⁷¹

Hitler's second misuse of the main effort concept was in his method of command which affected his subordinates' freedom of action. By constantly micro-managing his field commanders' operations, Hitler limited the commanders' freedom of action. If field commanders had been given freedom of action as the main effort force, he could have exploited the opportunities that he was in a better position to determine.

For example, the German field commander recognized that the Soviets had switched to a "flexible defense" to avoid encirclement. This required a change in tactics by the front line units.⁷² However, Hitler continued to dictate the conduct of the tactical battle, thus not allowing his subordinate commanders the freedom to compensate for the change in Soviet tactics.⁷³ Therefore, most of the battlefield opportunities were missed.

A third and final misuse of the main effort concept came in resource allocation. This campaign had the bare minimum resources to succeed. However, Hitler could have further reduced this risk and provided for a resource buffer, if he had prioritized throughout the theater of war and not just within the theater of operation. For example, Hitler made a strategic error at the completion of his

campaign in France by prioritizing industrial efforts towards building Air Force and Naval systems and limiting Army system production.⁷⁴ Hitler's invasion of Russia was done primarily from equipment reserves. By the time the Southern Campaign in Russia began, the Germans had no more equipment reserves. Hitler's misplaced strategic industrial priority did not support his strategic maneuver plans.

Two other areas also distracted resources from the main effort forces. First, Rommel's successes in North Africa and his personal influence enabled him to extract resources from Hitler that could have been allotted to the Southern Campaign. The second problem, involved Hitler's refusal to release his "best motorized division."⁷⁵ This division was originally earmarked to the main effort, but was not released because of Hitler's fear of an invasion in the West by the British.

In summary, this campaign was conducted with minimum assets and acceptance of considerable risk in several areas. However, if the main effort concept had been followed, there was a chance for success. Hitler's misuse of the main effort concept made a delicate operation an unsuccessful one.

JAPANESE 1942 CAMPAIGN IN THE PACIFIC
(CORAL SEA AND MIDWAY)

At sea it is more difficult than on land to foretell where the decisive point will be; but since it is quicker and easier at sea to concentrate forces at any particular point than on land, in applying this maxim for our purposes, the rule should be to dispose the forces at sea so as to be able to concentrate them in time at the decisive points as soon as this point is determined, and also so as to conceal from the enemy what it is intended to make the decisive point.

Julian S. Corbett⁷⁶

Strategic Setting

With the completed conquest of the Dutch East Indies the Japanese achieved their initial war aims by establishing a defensive island perimeter and securing the Southern Resource Area.⁷⁷ Riding the euphoria of this quick victory the Japanese leadership began to argue for an expansion in its strategic aims. The Army preferred to focus operations toward Australia while the Navy, primarily Yamamoto, preferred to focus operations towards Hawaii and specifically Midway.⁷⁸ Doolittle's raid on Japan settled the argument in Yamamoto's favor.

Doolittle's raid was important because the Japanese determined it could only have come from one of two "keyholes" in the current defensive island perimeter. These keyholes were located around Midway and the Aleutians.⁷⁹ Therefore, the final strategic ends were to include an expansion of the defensive perimeter to the Aleutians, Midway and, for the sake of Army interests, to the capture of New Guinea, Fiji and Samoa. The Army's focus effectively cut the supply lines to Australia.⁸⁰

Campaign Plan

Yamamoto's operational end was the destruction of the American Pacific Fleet. He perceived this fleet as the American operational center of gravity. Yamamoto's ways and means envisioned a classic Mahanian decisive naval battle between capital ships (battle-ships).⁸¹

The campaign was designed with two major axes of advance. Each axis was separated into several incremental steps. The southeastern axis's first step focused against the Eastern Solomons and Port Moresby for the purpose of controlling the Coral Sea area of operations (Operation MO).⁸² 5th Carrier Division (three carriers) was dedicated to this operation. This secondary axis was to conduct an operational pause, while the navy conducted the main operation in the east against Midway and the Aleutians (Operations MI & AL).⁸³ Upon completion of these operations, the second step in the southeast operations would commence to complete the isolation of Australia (Operation RY).⁸⁴ No detailed planning extended beyond Operations MI and AL.⁸⁵ This study will focus on the Yamamoto's eastern axis and operations MI (Midway) and AL (Aleutians).

Operation AL was designed to attack the Aleutian islands (Kiska and Attu) with the 2nd Carrier Striking Force (2 Carriers, 2 Heavy Cruisers, and 3 Destroyers) and the Northern Force (1 Heavy Cruiser, 2 Destroyers, Landing Force and Supply ships).⁸⁶

These forces were intended to deceive the Americans about Japan's true intentions. They were also designed to cause the commitment of U.S. Navy forces against this northern force, while

the main body attacked and secured the Midway Islands. The two carriers in the 2nd Carrier Striking Force were also supposed to augment the main effort for the final decisive naval engagement that would occur after the capture of the Midway Islands.⁸⁷

The main effort force was under the direct command of Yamamoto and consisted of four groups.

- 1st: Advance force (10 submarines).
- 2nd: Midway Occupation Force (2 battleships, 4 cruisers, cover screen, escorts and troop transports).
- 3rd: Carrier Striking Force (4 Carriers plus 3 carriers from Operation MO and 2 carriers from Operation AL for a total of 9 carriers).
- 4th: Main Body (3 battleships, 1 Lt Cruiser).⁸⁸

This main effort force was to attack Midway one day after the attack on the Aleutians had begun.

The attack plan on Midway was broken into three phases. Phase one was an air attack from the carriers on to the Midway Island. This air attack was to be followed by phase two, a landing and occupation. Phase two was severely hindered by the requirement to be completed in one day. The third phase envisioned a naval battle with the battleships playing the decisive role. The carriers were only to screen and protect the battleships and invasion forces.⁸⁹

Conduct of the Campaign (Significant Events)

During the conduct of Operation MO and the resulting Battle of the Coral Sea, the Japanese lost three carriers. The Japanese also mistakenly thought they had destroyed two U.S. carriers, the

Yorktown and the Lexington. Based on this belief, Yamamoto approved

the continuation of Operations MI and AL minus the three carriers.⁹⁰

While Operation AL achieved its tactical end, capture of Attu and Kiska, it did not achieve its operational end -- to draw the majority of the U.S. naval forces north. This was primarily due to the U.S. Navy's breakthrough in decoding encrypted Japanese radio transmissions.⁹¹ Consequently, Yamamoto was forced to engage the majority of the American forces with only four carriers. The American success against his carriers at Midway compelled Yamamoto to cancel the invasion and order a general withdrawal.⁹²

Campaign Analysis

Despite the American intelligence coup, Yamamoto still had the resources and combat power necessary to achieve his operational objectives. There were numerous shortcomings that contributed significantly to the Japanese failure (e.g., command and control and over reliance on the battleship). However, failures in main effort design were serious enough to tip the scales of success in favor of the United States.

Yamamoto properly identified the American center of gravity as the U.S. Pacific Fleet and designed a main effort force to attack it. If the attack had been successful, the United States may have had to relinquish its defense of Hawaii to defend the West Coast. The Japanese main effort failures involved plan design and execution, but not one of proper center of gravity determination.

Yamamoto's plan had five major problems that significantly affected the main effort concept. First, "in committing the 5th

Carrier Division to Operation MO, the Combined Fleet made the execution of the main effort, Operation MI, dependent on the outcome of the secondary effort."⁹³ Yamamoto lost three carriers at the Battle of Coral Sea (Operation MO) that he had planned to use as part of the main effort force during Operation MI.

The second major problem was the Japanese decision to divide and sequence the objective into two parts in a short period of time: seizing an island and then engaging the enemy naval force.⁹⁴ This division of focus caused the Japanese carrier aircraft to be outfitted for island bombing operations instead of counter-carrier operations (e.g., torpedoes). It also allowed U.S. planes to catch bomb laden planes on the decks of the Japanese carriers.

The third and fourth major problems involved Operation AL. This supporting operation diverted assets from the main effort force that were decisive to the actual battle for Midway (third problem). Although this may not have been as critical under the original plan, the loss of the three carriers during the Battle of Coral Sea should have caused Yamamoto to reinforce his main effort forces at Midway to reduce his risk there.

Operation AL was also supposed to serve as a collateral deception/decoy operation to support the main effort at Midway (fourth problem). As a collateral operation it did more than augment the main effort, because the main effort was dependent on it for success. Yamamoto's acceptance of risk in this area was further enhanced by his failure to acquire sufficient intelligence to

determine the location of the U.S. Pacific Fleet, specifically the U.S. carriers.

A fifth problem area involved the readiness of the Japanese carrier aircraft crews. The four carriers that participated in the Midway battle entered the battle greatly degraded in combat capability due to pilot and plane losses at Coral Sea. This was further aggravated by the low output of trained naval aviators and overall equipment shortages,⁹⁵ Yamamoto knew of these shortcomings. This should have given him further impetus to concentrate forces to accomplish the main effort objectives.

This campaign also illustrates a problem with designing a main effort force. Yamamoto envisioned the battleship as the decisive tactical force that would achieve his operational objective. Consequently, the degradation of his carrier force was not critical to Yamamoto's original tactical concept. He envisioned the carriers as a supporting force to the battleship. Assuming the battleship would be the decisive instrument, Yamamoto maintained his main effort focus. This campaign demonstrates two important points relevant to the main effort concept. First, the planner must identify the correct center of gravity and, second, the appropriate main effort force must be selected to achieve the desired end.

A final point for this analysis is the terminology used by H. P. Willmott in his book on this campaign entitled The Barrier and the Javelin. In describing both the planning and the conduct of the campaign, Willmott makes use of the term "main effort" to describe Yamamoto's primary actions. Use of this term to describe a naval

campaign may also contribute to the validity and necessity of using the main effort concept at the operational level, especially for naval operations.

In summary, Yamamoto clearly had the resources necessary to defeat the two carrier U.S. naval fleet. However, incorrect identification and designation of the proper tactical main effort force and his misuse of the main effort design concepts clearly had a significant adverse impact on the conduct of the campaign. This discussion suggests that the use of the main effort concept has utility in designing and conducting naval as well as ground operations of a campaign.

GERMAN AIR CAMPAIGN AGAINST BRITAIN (BATTLE OF BRITAIN)

The Battle of Britain...was to be a truly revolutionary conflict. For the first time since man had taken to the skies, aircraft were to be used as the instrument of a campaign designed to break the enemy's will and capacity to resist without the intervention or support of armies and navies.

John Keegan⁹⁶

Strategic Setting

After the successful completion of the 1st and 2nd phases of Operation Yellow, the Germans added a defeated France, Belgium and Netherlands to their growing empire. More importantly, they gained vital airfields from which to launch their air campaign against Britain. A 1939 German staff study accurately noted the Luftwaffe was not properly designed, equipped nor trained to achieve "a quick air victory over Britain."⁹⁷ Additionally, the Luftwaffe could not effectively attack the British lines of communication because of the range limitation of their aircraft.⁹⁸ This last point drove the inclusion of the Netherlands and Belgium Airfields as operation objectives into Operation Yellow. These objectives would facilitate the air interdiction of the British Islands.

With Directive #9 "Instructions for Warfare Against the Economy of the Enemy," Hitler initiated the air and naval campaign against British industries.⁹⁹ Hitler later issued Directive #13 which gave the Luftwaffe (Air Force) the independent mission against Britain's aircraft industry. During the conduct of the campaign Hitler issued Directives #16 and #17 that outlined the Luftwaffe's

role in gaining air superiority over south-eastern Britain to support the land invasion--Operation Sealion.¹⁰⁰ Operation Sealion was later canceled and Hitler attempted to defeat the British will to fight by air power alone.

Campaign Plan

Because of changing operational objectives and endstates, the air campaign against Britain essentially evolved into five phases. Phase one, Channel Battle (Kanal Kampf), was designed to gain air superiority over the channel by defeating the Royal Air Force (RAF) in the air. Phase two, Operation Eagle (Adlertag), was classic air to air battle to defeat the RAF and gain air superiority over south-east Britain. Phase three consisted of bombing operations against the RAF airfields and aircraft industries while continuing to destroy fighters in the air. Phase four, Battle of London, changed the operational objective to defeating the English by destroying their will, while still destroying what was left of the RAF in the air. The final Phase consisted of a series of minor raids also aimed against the will of the people.¹⁰¹

Conduct of the Campaign (Significant Events)

During phases one, two and three the Luftwaffe was experiencing success in the air and more importantly on the ground against RAF targets. "The Luftwaffe had begun to win the battle...[but on] 7 September the Schwerpunkt (focus of attack) would be shifted from airfields to London."¹⁰² This change would

prove decisive. While the Luftwaffe focused its operations on defeating the will of the people, the RAF was able to recover and eventually regain control of the air. The Luftwaffe failed to gain control of the air or defeat the will of the British before the opportune time frame for a sea and ground assault. This failure to meet the amphibious campaign season compelled Hitler to cancel Operation Sealion. Not wanting to waste his military momentum, Hitler turned his attention towards the Soviet Union. The final phase raids achieved only insignificant results and signaled the failure of the air campaign.¹⁰³

Campaign Analysis

The German staff accurately recognized some of the limitations of the ways and means that their air force offered for the achievement of the strategic objective of isolating Britain. The addition of the Netherlands and Belgium Airfields as part of Operation Yellow was an attempt to improve the ways and means available to achieve this end.

Complete isolation of the British Islands would require the joint effort of the Luftwaffe and the German Navy (Directive #9). However, the Germans accurately determined that they had the necessary aircraft and pilots (means) to destroy the RAF and achieve their operational objective of air superiority over the southeastern portion of Britain. It was the "weakness in the Luftwaffe's own conduct of the Battle [ways] that ultimately prevented it from gaining the victory within its grasp."¹⁰⁴ Violation of the main

effort concept was one of the major contributing factors to this unsuccessful campaign.

The Germans correctly identified the operational center of gravity as the RAF. The first major problem area involved German identification of the proper decisive points. The initial plans had the bomber forces as the main effort force in that they "would be used not only to knock out the RAF's ground organization and aircraft factories, but also act as bait for the RAF fighters."¹⁰⁵ The ground organizations were the decisive point of the RAF. However, they failed (except once) to target the RAF radar sights.¹⁰⁶ Additionally, they committed numerous sorties to bombing industrial complexes and naval ports before they achieved air superiority.¹⁰⁷ The failure to maintain the focus of efforts on the destruction of the RAF ground facilities and radar capabilities (decisive points) was instrumental in German failure to gain air superiority.

The failure to gain air superiority early on proved critical to what would be the most significant failure of the main effort concept. This failure involved the Luftwaffe and Hitler's change in the focus for the main effort force. Believing the RAF was close to being destroyed, and in retaliation for the bombing of Berlin by British aircraft, Hitler redirected his bombing campaign focus from the RAF to London.¹⁰⁸ By bombing London, the Luftwaffe felt that its bombers could draw the remaining RAF forces into a decisive air battle and achieve air superiority by attrition of RAF forces in the air.¹⁰⁹

This change in decisive points proved wrong for several reasons. First, the German tactic of drawing out the fighters was not effective because of the difference in capabilities between the Luftwaffe's bombers and fighters. This difference compelled the German fighters to give up their advantage in speed by forcing them to fly with the slower bombers. They also could not obtain optimal fighter positioning by flying at the desired higher fighter altitudes. These two limitations made air combat for their fighters extremely disadvantageous.¹¹⁰ Second, the German intelligence inaccurately reported a greater destruction of the RAF than had actually been achieved.¹¹¹ Consequently, the RAF was able to recover and begin to regain superiority of the air.

The next major failure involved the changing of the operational endstate beyond the means available. When the Luftwaffe's failed to gain air superiority in time for the conduct of Operation Sealion, Hitler canceled the operation. Now believing that Britain could be defeated "without the landing" he changed the operational and strategic war aims.¹¹² Hitler believed the air attacks on London would be decisive in that they would destroy the will of the English.¹¹³ This revised endstate (e.g., destroy the will of the English) clearly exceeded the means available to the Luftwaffe regardless of the use of the main effort concept.

In summary, the Germans possessed the means to achieve their initial operational end to destroy the British RAF. They also correctly identified the RAF as the British operational center of gravity and targeted the appropriate decisive points to achieve air

superiority (e.g., airfields and aircraft factories). However, they violated the main effort concept by committing forces on other targets before achieving air superiority over England.

Additionally, the change in main effort decisive point focus, (e.g., airfields to London/factories), illustrates the need to properly identify the correct decisive point. Finally, assigning an end that is beyond the means available cannot be overcome even by applying the main effort concept.

CONCLUSIONS/IMPLICATIONS

Conclusions

FM 100-5 states the main effort concept is an "Airland Battle Imperative." Lack of doctrinal discussion in the Air Force and Navy manuals calls to question whether the concept is an *air* and *sea*, as well as, a *land* imperative. Additionally, even Army manuals are limited in their discussions involving the concept, designation, weighting and purpose of tactical, as well as operational main efforts.

The main effort concept at the operational level is not addressed in the Joint doctrinal manuals. This lack of discussion at the joint level may cause confusion when subordinate service manuals prescribe a need for the use of main effort concepts. The lack of a definition for the term main effort can also cause misuse of the main effort concept.

This paper conducted an analysis to determine if the main effort concept is necessary to the design of a campaign plan. This analysis included a review of theory, current writing, and current doctrine to determine the attributes and design of the main effort concept. Results from this initial analysis and the ends, ways and means equation were then used as criteria to analyze both successful and unsuccessful campaigns. Results of this analysis are:

- * The main effort concept is supported by theoretical writings (e.g., Clausewitz and Jomini).

- * Army and Marine doctrine indicate the main effort concept is a battlefield imperative.

* The main effort concept proved instrumental to the successful conduct of Operation Yellow and the 1940 invasion of France by Germany.

* Misuse of the main effort concept contributed to the failure of Operation Blau and the German's 1941 campaign into the Soviets Southern Front.

* The main effort concept is applicable to the conduct of air and naval campaign planning. This was substantiated by the misuse of the main effort concept by Japanese naval forces and the German Luftwaffe. This misuse of the main effort concept significantly contributed to their unsuccessful campaigns in the Battle of Midway and Battle of Britain.

* Several military historians (e.g., Cooper, Willmott and Mainstein) specifically used the term main effort to describe both air, land and sea campaign designs.

Based on the above findings the main effort concept has played a significant role in the design and conduct of a campaign. Consequently, designating a main effort force, is not only desirable, but is essential to the design of a successful campaign plan.

Implications.

Current service tactical, operational and joint doctrines have several deficiencies in addressing the main effort concept (e.g., not defined, not addressed, no identification of design nor attributions of characteristics or tactics, techniques, and procedures). Until these problems are resolved, joint campaign planners may not have a clear understanding of this necessary operational planning concept. Therefore the following aspects must be considered for inclusion in service and joint doctrinal manuals:

* The term main effort, main effort force and main effort concept must be included in both service and joint doctrinal manuals.

* The terms "main effort" and "focus of effort" should be added to JCS Pub 1 and related service terminology manuals (e.g., FM 101-5-1).

* Further clarification of the methods of designating and weighting the main effort force must also be addressed in joint and service doctrine. For example:

** The main effort must be focused at a decisive point that will directly or indirectly affect the operational center of gravity.

** Weighting of the main effort can be done using the following methods: forces (combat, combat support, combat service support), sustainment (e.g., priority of supplies, ammo, personnel, etc.), support through collateral operations, and proper use and allocation of geography.

** Establishment of a main effort may require acceptance of risk in an economy of force or fixing zones.

** A force (means) and not an operation (way) must be designated as the main effort to achieve the beneficial attributes inherent in the main effort concept (e.g., responsibility, freedom of action, common basis for action, unity of effort, concentration and resource allocation).

In conclusion, the main effort concept is essential to the planning of the operational campaign. Doctrine writers and campaign planners may want to use the main effort concepts presented in this study for the development of future campaign plans.

Appendix A

OPERATIONAL TERMS

This appendix defines operational related terms used in this paper. Many of these terms have several definitions. However, this study will use only the definition listed below. Some terms had no definitions and therefore were given one by the author.

CAMPAIGN -- A series of joint actions designed to attain a strategic objective in a theater of war.¹¹⁴

CAMPAIGN PLAN -- A plan for a series of related military operations aimed to accomplish a common objective, normally within a given time and space.¹¹⁵

CENTER OF GRAVITY -- ...those sources of strength or balance [vital...to the smooth and reliable operation of the whole (force)...(the(loss (of which) unbalances the entire structure, producing a cascading deterioration in cohesion and effectiveness].¹¹⁶

DECISIVE POINT -- [A point] the possession of which, more than of any other, helps to secure the victory, by enabling its holder to make a proper application of the principles of war: arrangements should therefore be made for striking the decisive blow at this point.¹¹⁷

DOCTRINE -- An army's fundamental doctrine is the condensed expression of its approach to fighting campaigns, major operations, battles, and engagements.¹¹⁸

MAIN EFFORT -- is a concept that focuses operations (ways) and forces (means) toward the achievement of a desired endstate against an enemy center of gravity or decisive point and for a friendly center of gravity or decisive point. The concept dictates a unit's freedom of action, responsibility, and establishes a common basis of action. (Author)

MAIN EFFORT FORCE -- is the primary force designated to achieve the desired endstate. The main effort force has the greatest freedom of action and the least responsibility during an operation. (Author)

MAJOR OPERATION -- A major operation comprises the coordinated actions of large forces in a single phase of a campaign or in a critical battle.¹¹⁹

MILITARY GEOGRAPHY -- ...the topographical and strategic description of the theater of war....¹²⁰

OPERATION -- A military action or the carrying out of a strategic, tactical, service, training, or administrative military mission; the process of carrying on combat, including movement, supply, attack, defense, and maneuvers needed to gain the objectives of any battle or campaign.¹²¹

OPERATIONAL ART -- Operational art is the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization and conduct of campaigns and major operations...Operational art thus involves fundamental decisions about when and where to fight and whether to accept or decline battle. Its essence is the identification of the enemy's operational center-of-gravity -- his source of strength or balance -- and the concentration of superior combat power against that point to achieve a decisive success.¹²²

STRATEGY -- Military strategy is the art and science of employing the armed forces of a nation or alliance to secure policy objectives by the application or threat of force.¹²³

SYNCHRONIZATION -- is the arrangement of battlefield activities in time, space and purpose to produce maximum relative combat power at the decisive point.¹²⁴

TACTICS -- ...is the art by which corps and smaller unit commanders translate potential combat power into victorious battles and engagements.¹²⁵

THEATER OF FOCUS -- A theater in which operations are most critical to national interests and are assigned the highest priority for apportionment or allocation of resources.¹²⁶

ENDNOTES

1. James R. McDonough, LTC, USA, The Defense of Hill 781. (Novato, California: Presidio Press, 1988), p. 55.
2. U.S. Department of the Army, Operations, Field Manual 100-5. (Washington, D.C.: Government Printing Office, 1986), p. 24.
3. U.S. Department of the Air Force, Basic Aerospace Doctrine, Air Force Manual (AFM) 1-1. (Washington, D.C.: Government Printing Office, March 1984), p. 2-7.
4. U.S. Department of the Navy, Campaigning, FMFM 1-1. (Washington D.C.: Government Printing Office, January 1990), p. 36.
5. Ibid.
6. U.S. Joint Chiefs of Staff, Doctrine For Unified and Joint Operations (Draft), JCS Pub 3-0. (Washington, D.C.: Government Printing Office, 1991), p. xiv.
7. Ibid.
8. For purposes of this study the EWM equation is represented by Ends = Ways x Means.
9. Ibid, p. 24.
10. Ibid.
11. For example, FM 71-100 states: "The main effort is assigned to only one unit. U.S. Department of the Army, Division Operations, Field Manual 71-100. (Washington, D.C.: Government Printing Office, June 1990), p. 4-7.
12. For example, U.S. Department of the Army, FM 71-100, Division Operations. Field Manual 71-100. (Washington, D.C.: Government Printing Office, June 1990), pp. 1-22-3, 4-9, 4-13, 5-3.
13. U.S. Department of the Navy, Campaigning. FMFM 1-1. (Washington, D.C.: Government Printing Office, 25 January 1990), p. 33.
14. Carl Von Clausewitz. On War, translated and ed. by Michael Howard and Peter Paret (Princeton, New Jersey: Princeton University Press, 1984), p. 624.
15. Ibid, pp. 194-197, 204, 205-209.

16. Antoine H. Jomini, The Art of War, trans. G.H. Mendell and W.P. Craighill (1862; reprint ed., Westport, CT: Greenwood Press, 1977), p. 69.
17. Lecture by LTC Zehrer, German Army, Ft. Leavenworth, Kansas, 27 February 1991.
18. John L. Romjue, "Airland Battle: The Historical Perspective," Military Review 66, no. 3 (March 1986): 55; Schnieder, "The Theory of Operational Art," p. 27.
19. Chris Bellamy, The Future of Land Warfare (New York: St. Martin's Press, 1987), p. 142.
20. Ferdinand O. Miksche, Attack: A Study of Blitzkrieg Tactics, (1942; reprint ed., Art of War Colloquium Publication, Carlisle Barracks, PA: USAWC, 1 December 1983), p. 2.
21. For example, tactical doctrine discusses main effort and main attack in the same context (e.g., FM 100-15, p.5-17). There is no comparable term or discussion in the defensive chapter. Clausewitz quote on page five of this paper (endnote 13) is an example of the suggested use for offensive operations.
22. For purposes of this study Center of Gravity is defined as: "...those sources of strength or balance [vital... to the smooth and reliable operation of the whole (force)...(the) loss (of which) unbalances the entire structure, producing a cascading deterioration in cohesion and effectiveness]." FM 100-5 Operations (May 1986), p. 179.
23. FM 100-5, p. 179.
24. Clausewitz, On War, p. 624.
25. GEN John W. Foss, USA. "Command," Military Review, May 1990, p. 4.
26. Ibid.
27. For purposes of this paper, the term resource includes both forces and supplies.
28. Clausewitz, On War, p. 623.
29. These methods are taken from the author's personal experiences at the NTC as an observer controller and the interpretation/compilation of numerous doctrinal and professional readings. This list is provided as a recommendation only and is not intended to be a comprehensive list.
30. Field Manual 71-100, p. 4-7.

31. The term collateral operations was taken from an article by GEN William Depuy, USA, Ret. The notion of collateral operations in support of the main effort was derived from an interview with GEN Depuy concerning the use of his term, collateral operations. William E. Depuy, GEN (Ret), USA. "For the Joint Specialist: Five Steep Hills to Climb," Parameters, September 1989, pp. 9-10. and a telephone interview with GEN Depuy on 18 December 1990.

32. Ibid.

33. This technique was brought to the attention of the author during his attendance at the Infantry Officers Advance Course in 1981. It was subsequently addressed by instructors at the Command and General Staff College in 1990. These courses referred to tactical doctrine use of terrain. I interpolated this technique to apply to geography at the operational level. Both techniques are based on limiting time and space to achieve concentration of forces.

34. Clausewitz, On War, p. 197.

35. U.S. Department of the Army, Corps Operations. Field Manual 100-15. (Washington, D.C.: Government Printing Office, September 1989), p. 5-3.

36. Quoted in Matthew Cooper. The German Army 1933-1945, (Chelsea, MI: Scarborough House/Publishers, 1978), p. 216.

37. Description of Germany's war plans and design is the product of hindsight and current campaign terminology. Actual German war plans may not have been the result of an overall grand design by Hitler. However, the resulting operations can be summarized using current terms and campaign designs.

38. Hermann Kinder and Werner Hilgemann, The Anchor Atlas of World History, Vol II. translated by Ernest A. Menze (New York: Anchor Press, 1978), p. 199.

39. Richard Natkeil. Atlas of World War II, (New York: The Military Press, 1985), pp. 34-37.

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